

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-34 (cancelled)

1 Claim 35 (new): A relative location data correction
2 apparatus for correcting a shift of a location of a
3 predetermined point, said location is relatively indicated
4 as relative location data and said shift is a different
5 between two map databases, said apparatus comprising:

6 a first shape data obtaining unit for obtaining first
7 shape data from a first map database;

8 a relative location data creating unit for creating
9 relative location data of an event occurrence point,
10 wherein said relative location data indicates relative
11 location to a node designated in said first shape data;

12 a second shape data obtaining unit for obtaining
13 second shape data from a second map database, wherein said
14 second shape data has a second point corresponding to said
15 event occurrence point;

16 a first determining unit for determining a first total
17 length of the first shape data; and

18 a second determining unit for a second total length of
19 the second shape data; and

20 a correction unit for correcting said relative

21 location data by using said first total length and said
22 second total length.

1 Claim 36 (new): The relative location data correction
2 apparatus according to claim 35,
3 wherein said correction unit corrects the relative
4 location data by using a ratio of said first total length
5 to said second total length.

1 Claim 37 (new): A rrelative location data correction
2 apparatus for correcting a shift of a location of a
3 predetermined point, said location is relatively indicated
4 as relative location data and said shift is a different
5 between two map databases, said apparatus comprising:

6 a transmission apparatus including:
7 a first map database;
8 location expression conversion means for
9 converting an event occurrence point into relative location
10 data to a node designated in a first shape data, said first
11 shape data is obtained from said first map database and
12 represents the periphery of said event occurrence point;
13 and

14 first total length determination means for
15 determining a first total length of said first shape data;
16 wherein said transmission apparatus transmits said
17 relative location data, and first shape data, and said

18 first total length, and
19 a reception apparatus including:
20 a second map database;
21 second total length determination means for
22 determining a total length of a second shape data, which is
23 obtained from said second map database and to which a
24 second point corresponding to said event occurrence point
25 belongs;
26 first relative location correction means for
27 correcting said relative location data by using said first
28 total length and said second total length; and
29 event occurrence point specification means for
30 specifying location of said second point corresponding to
31 said event occurrence point, based on said corrected
32 relative location and said second shape data.

1 Claim 38 (new): A relative location data correction
2 apparatus for correcting a shift of a location of a
3 predetermined point, said location is relatively indicated
4 as relative location data and said shift is a different
5 between two map databases, said apparatus comprising:
6 a transmission apparatus including:
7 a first map database; and
8 location expression conversion means for
9 converting an event occurrence point into relative location
10 data to a node designated in a first shape data, based on

the first shape data obtained from said first map database
and representing the periphery of said event occurrence
point,

wherein said transmission apparatus transmits said
relative location data and said first shape data, and
a reception apparatus;

first total length determination means for
determining a first total length of said first shape data
transmitted by said transmission apparatus;

a second map database;

second total length determination means for
determining a second total length of a second shape data
which is obtained from said second map database and to
which a second point corresponding to said event occurrence
point belongs;

first relative location correction means for
corrects said relative location data by using said first
total length and said second total length; and

event occurrence point specification means for
specifying said second point corresponding to said event
occurrence point, based on said corrected relative location
data and said second shape data.

Claim 39 (new): The relative location data correction
apparatus according to claim 37,

wherein said transmission apparatus further includes:

4 shape data compression/transformation means for
5 creating a first processed shape data by an irreversible
6 compression process said first shape data, or a shape
7 transformation process of said first shape data;

8 first shape data decoding means for creating a
9 third shape data by decoding said first processed shape
10 data;

11 third total length determination means for
12 determining a third total length of said third shape data;
13 and

14 second relative location correction means for
15 creating a second corrected relative location data by
16 correcting said relative location data by using said first
17 total length and said third total length,

18 wherein said transmission apparatus transmits said
19 second corrected relative location data, said first
20 processed shape data, and said third total length, and

21 wherein said reception apparatus further includes:

22 second shape data decoding means for decoding
23 said first processed shape data,

24 wherein said first relative location correction
25 means corrects said second corrected relative location data
26 by using said third total length and said second total
27 length.

1 Claim 40 (new): The relative location data correction

2 apparatus according to claim 38,

3 wherein said transmission apparatus further includes:

4 shape data compression/transformation means for
5 creating a first processed shape data by performing an
6 irreversible compression process of said first shape data,
7 or a shape transformation process of said first shape data;

8 first shape data decoding means for creating a
9 third shape data by decoding said first processed shape
10 data;

11 third total length determination means for
12 determining a third total length of said third shape data;
13 and

14 second relative location correction means for
15 creating a second relative location data by correcting said
16 relative location data by using said first total length and
17 said third total length,

18 wherein said transmission apparatus transmits said
19 second corrected relative location data and said first
20 processed shape data, and

21 wherein said reception apparatus further includes:

22 second shape data decoding means for creating a
23 fourth shape data by decoding said first processed shape
24 data; and

25 fourth total length determination means for
26 determining a fourth total length of said fourth shape
27 data,

28 wherein said first relative location correction
29 means corrects said second corrected relative location data
30 by using said second total length and said fourth total
31 length determined by said third total length determination
32 means and.

1 Claim 41 (new): The relative location data correction
2 apparatus according to one of claims 37 to 40,
3 wherein said first shape data has a first feature node
4 designated between nodes at both terminal ends of said
5 first shape data,
6 wherein said second shape data has a second feature
7 node corresponding to said first feature node, and
8 wherein said location expression conversion means
9 converts said event occurrence point into a relative
10 location data to said feature node.

1 Claim 42 (new): The relative location data correction
2 apparatus according to claim 39,
3 wherein said first shape data has at least tow first
4 feature nodes designated between nodes at both terminal
5 ends of said first shape data,
6 wherein said second shape data has second feature
7 nodes corresponding to said first feature nodes,
8 wherein said third shape data has third feature nodes
9 corresponding to said first feature nodes,

10 if said event occurrence point is located between said
11 first feature nodes and said second point is between said
12 second feature nodes, wherein said first total length
13 determination means calculates a total length of a distance
14 between said first feature nodes, said second total length
15 determination means calculates a total length of a distance
16 between said second feature nodes, and said third total
17 length determination means calculates a total length of a
18 distance between said third feature nodes.

1 Claim 43 (new): The relative location data correction
2 apparatus according to claim 40,

3 wherein said first shape data has at least tow first
4 feature nodes designated between nodes at both terminal
5 ends of said first shape data,

6 wherein said second shape data has second feature
7 nodes corresponding to said first feature nodes,

8 wherein said third shape data has third feature nodes
9 corresponding to said first feature nodes,

10 wherein said fourth shape data has fourth feature
11 nodes corresponding to said first feature nodes, and

12 if said event occurrence point is located between said
13 first feature nodes, wherein said first total length
14 determination means calculates a total length of a distance
15 between said first feature nodes, said second total length
16 determination means calculates a total length of a distance

17 between said second feature nodes, said third total length
18 determination means calculates a total length of a distance
19 between said third feature nodes, and said fourth total
20 length determination means calculates a total length of a
21 distance between said fourth feature nodes.

1 Claim 44 (new): The relative location data correction
2 apparatus according to one of claims 37 to 43,
3 wherein said each total length is determined with
4 calculation or with reference to a predetermined value.

1 Claim 45 (new): The relative location data correction
2 apparatus according to one of claims 41 to 44,
3 wherein said transmission apparatus further transmits
4 shape data attribute information for identifying said each
5 first feature node and indicating type of said each first
6 feature node.

1 Claim 46 (new): The relative location data correction
2 apparatus according to one of claims 41 to 45,
3 wherein said each first feature node is designated at
4 a point whereat an angle difference in a predetermined area
5 for a link constituting said first shape data is equal to
6 or greater than a predetermined angle.

1 Claim 47 (new): A relative location data correction

2 method, for correcting a shift of a location of a
3 predetermined point, said location is relatively indicated
4 as relative location data and said shift is a different
5 between two map databases, said method comprising the steps
6 of:

7 obtaining a first shape data from a first map
8 database;

9 creating a relative location data of an event
10 occurrence point to a node in said first shape data;

11 determining a first total length of said first shape
12 data;

13 obtaining a second shape data corresponding to said
14 first shape data from a second map database;

15 determining a second total length of said second shape
16 data; and

17 correcting said relative location data by using said
18 first total length and said second total length.

1 Claim 48 (new): The relative location data correction
2 method according to claim 47,

3 wherein, in the step of correcting said relative
4 location data, said relative location data is corrected by
5 using a ratio of said first total length to said second
6 total length.

1 Claim 49 (new): A relative location data correction

2 method, for correcting a shift of a location of a
3 predetermined point, said location is relatively indicated
4 as relative location data and said shift is a different
5 between two map databases, said method comprising the steps
6 of:

7 obtaining a first shape data including an event
8 occurrence point from a first map database;

9 converting a location expression of said event
10 occurrence point into a relative location data to a node in
11 the said first shape data;

12 determining a first total length of said first shape
13 data;

14 transmitting relative location data for transmitting
15 said relative location data, said first shape data, and
16 said first total length;

17 obtaining a second shape data including a second point
18 corresponding to said event occurrence point from a second
19 map database;

20 determining a second total length of said second shape
21 data; and

22 first correcting for correcting said relative location
23 data by using said first total length and said second total
24 length.

1 Claim 50 (new): A relative location data correction
2 method, for correcting a shift of a location of a

3 predetermined point, said location is relatively indicated
4 as relative location data and said shift is a different
5 between two map databases, said method comprising the steps
6 of:

7 obtaining a first shape data including an event
8 occurrence point from a first map database;

9 converting a location expression of said event
10 occurrence point into a relative location data to a node in
11 the said first shape data;

12 transmitting for transmitting said relative location
13 data and said first shape data;

14 determining a first total length of said first shape
15 data;

16 obtaining a second shape data including a second point
17 corresponding to said event occurrence point form a second
18 map database;

19 determining a second total length of said second shape
20 data; and

21 first correcting for correcting said relative location
22 data by using said first total length and said second total
23 length.

1 Claim 51 (new): The relative location data correction
2 method according to claim 49, further comprising the steps
3 of:

4 compressing/transforming for creating a first

5 processed shape data by performing an irreversible
6 compression process said first shape data, or a shape
7 transformation process of said first shape data;

8 a first decoding for creating a third shape data by
9 decoding said first processed shape data;

10 a determining a third total length of said third shape
11 data;

12 a second correcting for creating a second corrected
13 relative location data by correcting said relative location
14 data by using said first total length and said third total
15 length; and

16 a second decoding for decoding a processed first shape
17 data,

18 wherein, in the step of transmitting, said second
19 corrected relative location data, said first processed
20 shape data, and said third total length are transmitted,
21 and

22 wherein, in the step of first correcting, said
23 relative location data is corrected by correcting said
24 second corrected relative location data by using said third
25 total length and said second total length.

1 Claim 52 (new): The relative location data correction
2 method according to claim 50, further comprising the steps
3 of:

4 compressing/transforming for creating a first

5 processed shape data by performing an irreversible
6 compression process of said first shape data, or a shape
7 transformation process of said first shape data;

8 a first decoding for creating a third shape data by
9 decoding said first processed shape data;

10 a determining a third total length of said third shape
11 data;

12 a second correcting for creating a second corrected
13 relative location data by using said first total length and
14 said third total length;

15 a second decoding for creating a fourth shape data of
16 decoding said first processed shape data; and

17 a determining a fourth total length of said fourth
18 shape data,

19 wherein, in the step of transmitting, said second
20 corrected relative location data and said first processed
21 shape data is transmitted, and

22 wherein, in the step of first correcting, said
23 relative location data is corrected by correcting said
24 second corrected relative location data by using said
25 second total length and said fourth total length.

1 Claim 53 (new): The relative location data correction
2 method according to one of claims 49 to 52,

3 wherein said first shape data has a first feature node
4 designated between nodes at both terminal ends of said

5 first shape data,
6 wherein said second shape data has a second feature
7 node corresponding to said first feature node, and
8 wherein said location expression conversion means
9 converts said event occurrence point into a relative
10 location data to said feature node.

1 Claim 54 (new): The relative location data correction
2 method according to claim 51,

3 wherein said first shape data has at least tow first
4 feature nodes designated between nodes at both terminal
5 ends of said first shape data,

6 wherein said second shape data has second feature
7 nodes corresponding to said first feature nodes,

8 wherein said third shape data has third feature nodes
9 corresponding to said first feature nodes, and

10 if said event occurrence point is located between said
11 first feature nodes and said second point is between said
12 second feature nodes, wherein a total length of a distance
13 between said first feature nodes is determined as said
14 first total length, a total length of a distance between
15 said second feature nodes is determined as said second
16 total length, and a total length of a distance between said
17 third feature nodes is determined as said third total
18 length.

1 Claim 55 (new): The relative location data correction
2 method according to claim 52,

3 wherein said first shape data has at least tow first
4 feature nodes designated between nodes at both terminal
5 ends of said first shape data,

6 wherein said second shape data has second feature
7 nodes corresponding to said first feature nodes,

8 wherein said third shape data has third feature nodes
9 corresponding to said first feature nodes,

10 wherein said fourth shape data has fourth feature
11 nodes corresponding to said first feature nodes, and

12 if said event occurrence point is located between said
13 first feature nodes and said second point is between said
14 second feature nodes, wherein a total length of a distance
15 between said first feature nodes is determined as said
16 first total length, a total length of a distance between
17 said second feature nodes is determined as said second
18 total length, a total length of a distance between said
19 third feature nodes is determined as said third total
20 length, and a total length of a distance between said
21 fourth feature nodes is determined as said fourth total
22 length.

1 Claim 56 (new): The relative location data correction
2 method according to one of claims 49 to 55,

3 wherein said each total length is determined with

4 calculation or with reference to a predetermined value.

1 Claim 57 (new): The relative location data correction
2 method according to one of claims 53 to 56,
3 wherein, in the step of transmitting, shape data
4 attribute information for identifying said each first
5 feature node and indicating type of said each first feature
6 node are transmitted.

1 Claim 58 (new): The relative location data correction
2 method according to one of claims 53 to 57,
3 wherein said each first feature node is designated at
4 a point whereat an angle difference in a predetermined area
5 for a link constituting said first shape data is equal to
6 or greater than a predetermined angle.

1 Claim 59 (new): A relative location data correction
2 program, which permits a computer to perform a relative
3 location data correction method according to one of claims
4 47 to 58.

1 Claim 60 (new): A shape data generation apparatus for
2 generating a shape data representing a predetermined
3 section including an event occurrence point, said apparatus
4 comprising:
5 a map database;

6 a map data obtaining unit for obtaining a map data
7 covering an area where said event occurrence point exists;

8 a shape data obtaining unit for obtaining a shape data
9 from said map data, wherein said shape data includes said
10 event occurrence point;

11 a relative location data creating unit for converting
12 a location expression of said event occurrence point into
13 a relative location to a node in said shape data;

14 a feature node designating unit for designating a
15 feature node which is a point in said predetermined section
16 or in the periphery of said section and satisfies a
17 predetermined condition; and

18 a shape data updating unit for updating said shape
19 data so as to have said feature node, if said feature node
20 is designated in the periphery of said section.

1 Claim 61 (new): The shape data generation apparatus
2 according to claim 60, further comprising:

3 a nearest feature node obtaining unit for obtaining a
4 feature node nearest to said event occurrence point; and

5 a location expression converting unit for converting
6 said relative location data into a relative location to
7 said nearest feature node.

1 Claim 62 (new): The shape data generation apparatus
2 according to claim 60 or 61,

3 wherein, if a start point or an end point of said
4 shape data is not suitable for the predetermined condition,
5 said feature node determining unit checks whether a more
6 suitable point than said start point or said end point
7 exists in said shape data, and then determines said feature
8 node in the vicinity of said start point or said end point.

1 Claim 63 (new): The shape data generation apparatus
2 according to one of claims 60 to 62,

3 wherein said feature node designating unit designates
4 plural feature nodes by selecting a point which is located
5 within a predetermined distance from a previously selected
6 point as a feature node and satisfies said predetermined
7 condition, and repeating said selecting point along said
8 shape data predetermined number of times.

1 Claim 64 (new): The shape data generation apparatus
2 according to one of claims 60 to 63,

3 wherein said predetermined condition is that an
4 absolute declination value at a point in a predetermined
5 area between two continuous links characterized in that
6 said point that satisfies said predetermined condition is
7 a point for which an absolute declination value is equal to
8 or greater than a predetermined value.

1 Claim 65 (new): A shape data generation method, for

2 obtaining map data from a map database and for generating
3 a shape data representing a predetermined section, said
4 method comprising the step of:

5 obtaining a map data covering an area where said event
6 occurrence point exists;

7 obtaining a shape data from said map data, wherein
8 said shape data includes said event occurrence point;

9 creating a relative location data by converting a
10 location expression of said event occurrence point into a
11 relative location to a node in said shape data;

12 designating a feature node which is a point in said
13 predetermined section or in the periphery of said section
14 and satisfies a predetermined condition; and

15 updating said shape data so as to have said feature
16 node, if said feature node is designated in the periphery
17 of said section.

1 Claim 66 (new): The shape data generation method
2 according to claim 65, further comprising:

3 obtaining a feature node nearest to said event
4 occurrence point; and

5 converting said relative location data into a relative
6 location to said nearest feature node.

1 Claim 67 (new): The shape data generation method
2 according to claim 65 or 66,

3 wherein, if a start point or an end point of said
4 shape data is not suitable for the predetermined condition,
5 in the step of determining feature node, checking whether
6 a more suitable point than said start point or said end
7 point exists in said shape data, and then determining said
8 feature node in the vicinity of said start point or said
9 end point.

1 Claim 68 (new): The shape data generation method
2 according to one of claims 65 to 67,

3 wherein, in the step of designating feature node,
4 plural feature nodes are designated by selecting a point
5 which is located within a predetermined distance from a
6 previously selected point as a feature node and satisfies
7 said predetermined condition, and repeating said selecting
8 point along said shape data predetermined number of times.

1 Claim 69 (new): The shape data generation method
2 according to one of claims 65 to 67,

3 wherein said predetermined condition is that an
4 absolute declination value at a point in a predetermined
5 area between two continuous links characterized in that
6 said point that satisfies said predetermined condition is
7 a point for which an absolute declination value is equal to
8 or greater than a predetermined value.

1 Claim 70 (new): A shape data generation program,
2 which permits a computer to perform a shape data generation
3 method according to one of claims 65 to 69.